APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,461	09/11/2006	Werner Weiershausen	2133.096USU	8972

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EXAMINER
TRAN, DZUNG D

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/564,461	WEIERSHAUSEN ET AL.
	Examiner	Art Unit	
	Dzung D. Tran	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2006*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-5 and 7-16* is/are rejected.
7)☒ Claim(s) *6 and 17* is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2.   Claims 14 and 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 14 claims both a method and apparatus (i.e., computer simulation to a model of an optical transmission line) resulting in a hybrid claim. The claim direct to neither a "process" nor a "machine", but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only.

Claim 15 claims the use of the method claim.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-5, 7-13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. US 7,206,517 in view of Djupsjobacka A. Calculation of

signal outage due to polarization mode dispersion; IEE Photonics Technology Letters Vol. 13, no. 7, July 2001, pages 660-662.

Regarding claims 1 and 16, Yu discloses an apparatus/ method for determining a PMD-induced outage probability of an optical transmission system, which includes an optical transmission line having at least one optical input and at least one optical output (see Figures 1, 3), during a specified/specifiable observation period, comprising:

within the observation period and in at least one first position of the transmission line, changing polarization states (i.e., by scrambling PC 12) of the optical transmission system and/or optical signals transmitted by the optical transmission system by bringing a targeted intervention to bear (col. 3, line 66 to col. 4, line 12),

at a second position, which is interposed at least one place downstream from the first position of the optical transmission line, quantitatively measuring (i.e., monitor 16) at least one specified/specifiable signal characteristic, checking the signal characteristic for compliance with a specified/specifiable threshold condition (col. 4, lines 12-52).

Yu discloses for measuring the BER (col. 5, lnes 3-7), however, Yu does not specifically disclose for calculating the PMD-induced outage probability of the optical transmission system on the basis of ratio of a length of time during which the measured signal characteristic fails to meet the threshold condition to a length of the observation period.

Djupsjobacka discloses for calculating the PMD-induced outage probability of the optical transmission system on the basis of ratio of a length of time during which the

measured signal characteristic fails to meet the threshold condition to a length of the observation period (see whole document).

At the time of the invention was made, it would have been obvious to an artisan to include the teaching of Djupsjobacka in the system of Yu that is calculating the PMD-induced outage probability of the optical transmission system on the basis of ratio of a length of time during which the measured signal characteristic fails to meet the threshold condition to a length of the observation period. One of ordinary skill in the art would have been motivated to do that in order to obtain more accuracy PMD outage under the worst case PSP.

Regarding claim 2, Yu discloses in Figures 1, 3, wherein the method is applied to an optical transmission line, which includes a first optical element LD 301, a second optical element 314, and a multitude of additional optical elements scrambling PC, 317, 310, 318, 313, …, imposed between the first optical element and the second optical element, wherein the changes of the polarization states (i.e., scrambling PC) of the optical transmission system and/or the signals transmitted by the optical transmission system are carried out at the position of the first element and/or the additional optical elements, and the measurement BERT 315 of the at least one signal characteristic is carried out at or close to the second optical element Rx 314.

Regarding claim 3, Yu discloses wherein the at least one signal characteristic is either directly measured or indirectly determined at the second optical element (i.e., the BER is measured by BERT; col. 5, lines 5-7).

Regarding claim 4, Yu discloses wherein the at least one signal characteristic is indirectly determined by diverting a part of the transmitted optical signals upstream of the second optical element (col. 5, lines 5-7, 34-49).

Regarding claim 5, Yu discloses wherein the change in the polarization states of the optical transmission and/or the optical signals transmitted by the optical transmission system are implemented by launching and/or transmitting the optical signals with varied polarization states (col. 2, lines 6-23).

Regarding claim 7, Yu discloses wherein the method is carried out using a digital (i.e., optical signal) or analog signal.

Regarding claim 8, Yu discloses wherein the signal characteristic is measured as a characteristic selected from the group consisting of a bit error rate, an eye diagram, and an amplitude of the signal (i.e., the BER is measured by BERT; col. 5, lines 5-7).

Regarding claim 9, Yu discloses specifying a maximum and/or a minimum signal characteristic value as a threshold value (col. 5, lines 57-59; i.e., 10^{-9} BER)

Regarding claim 10, Yu discloses for modifying the optical transmission system for carrying out the process in its entirety so that the outage probability of the optical transmission system is determined for the modified transmission system and the outage probability of the optical transmission system is determined without modification by inference (see Figure 3).

Regarding claim 11, Yu discloses an attenuator 318 of Figure 3 to reduce the observation period, for carrying out the method.

Regarding claim 12, Yu discloses wherein changing the polarization states is

accomplished by using at least one polarization controller and/or at least one

polarization scrambler (col. 3, line 66 to col. 4, line 12).

Regarding claim 13, Yu discloses wherein the optical transmission line is a real

optical transmission line (see Figures 1, 3).

5.   Claims 6 and 17 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

a.   Way et al. U.S. Patent no. 6,583,903. Method and system for controlling

polarization mode dispersion

b.   Chou et al. U.S. Publication no. 2003/0202798. Polarization mode dispersion

compensator parallel monitoring and control

c.   Khosravani et al. U.S. Publication no. 2001/0024538. Polarization mode

dispersion emulator

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dzung D Tran whose telephone number is (571) 272-

3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vanderpuye Kenneth, can be reached on (571) 272-3078. The fax phone

number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran

06/05/2009

/Dzung D Tran/

Primary Examiner, Art Unit 2613